Remarks

The Office Action mailed 22 May 2002 has been received and reviewed. Claims 40-51 were added. Claims 1, 3-5, 7-21, 23-25 and 27-51 are pending. Reconsideration and withdrawal of the rejections are respectfully requested.

Drawings

Applicants respectfully request consideration and approval of amended Figures 3 and 11, submitted with Applicants response to the 7 November 2001 Office Action.

Claims

Applicants added claims 40-51. New independent claim 40 substantially recites the subject matter of independent claim 1 and dependent claim 18. New dependent claims 41 and 42 substantially recite the subject matter of dependent claims 19 and 20, respectively. New independent claim 43 substantially recites the subject matter of independent claim 1 and dependent claim 9. New dependent claims 44, 45 and 46 substantially recite the subject matter of dependent claims 10, 11, and 12, respectively. New independent claim 47 substantially recites the subject matter of independent claim 21 and dependent claim 29. New dependent claims 48, 49, and 50 substantially recite the subject matter of dependent claims 30, 31, and 32, respectively. Finally, new independent claim 51 substantially recites the subject matter of independent claim 21 and dependent claim 38.

No claims were amended. Claims 1, 3-5, 7-21, 23-25 and 27-51 are pending.

The 35 U.S.C. §103 Rejection

Claims 1, 3-5, 7-13, 15-17, 19, 21, 23-25, 27-33, and 35-38

The Office Action rejected claims 1, 3-5, 7-13, 15-17, 19, 21, 23-25, 27-33, and 35-38 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,675,147 to Schaefer *et al.* (hereinafter "Schaefer") in view of U.S. Patent No. 5,375,199 to Harrow *et al.* (hereinafter "Harrow"). Applicants respectfully traverse the rejection of the claims, as follows.

In claims 1 and 21, Applicants teach a computer implemented graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables. The one or more of the process variables includes high and low process limit values associated therewith. The graphical user display includes one or more graphical devices, where each graphical device corresponds to a process variable. The graphical device for a corresponding process variable includes a display of a gauge axis and a first and second pair of high and low elements. The first pair of high and low limit elements are representative of engineering hard high and low limit values for the corresponding process variable. The second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis. A graphical shape is displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values.

Schaefer indicates that "[t]he real time actual and reference values of parameters pertinent to key safety concerns of a . . . power plant are used to generate an integrated graphic display representative of the plant safety status" (Abstract). "Some of the status signals are analog and some are binary . . . limit signals are also generated [for the analog signals] and are normalized by locating indicia representative of all the high limits a second fixed distance from the common origin" (Col. 3, lines 50-55). "The actual values of the operating parameters are

then indicated by locating the verticies of the polygon relative to the fixed distance on the appropriate scale determined by the current values of the reference signal and the limit signals (Col. 3, lines 56-61). So, the real time actual values of the operating parameters are plotted on the graphical display for monitoring the safety status of the plant.

Harrow recites a "system monitoring device" that displays "historical or real time information and also allows a user to set, via direct manipulation, a range of values in relation to other currently displayed information in graphical format on a computer screen" (Abstract). "The user interface . . . allows the user to expand the value of the second interactive icon 200 into a range of values so that there is a range, or hysteresis, between the point at which some activity may take place and the point at which that activity is canceled" (Col. 18, lines 33-38). "The second exemplary interactive icon 200 is illustrated in its expanded state on the underlying graph in FIG. 13A . . . [where] the user can move the range of values along the y-axis by dragging the slider 202 of the second interactive icon 200 to thereby change the values but not the width of the range . . . [d]ragging the slider 202 of the second interactive icon 200 into the top or bottom of the underlying graphic display of data causes the scale of the underlying data to expand or contract so that any value can be set" (Col. 18, line 67 through Col. 19, line 9).

To establish a *prima facie* case of obviousness, three basic criteria must be meet. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations.

Applicants respectfully submit that Schaefer and Harrow fail to teach or suggest all the claim limitations of claims 1 and 21. For example, Schaefer and Harrow fail to teach or suggest displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit

elements representative of operator set high and low limit values for the corresponding process variable, as recited in claims 1 and 21.

Schaefer recites that "[t]he values of parameters represented in analog form are dynamically scaled between the reference value and high and low limits which are displayed as tic marks at fixed distances along spokes radiating from the common origin and passing through the vertices" (Schaefer, Abstract). Harrow recites that "a second interactive icon . . . allows a user to set a range of values in relationship to graphically presented data" (Col. 17, line 68 – Col. 18, line 2). In its default condition, "the indicator bar 204 . . . [supplies] a single crossing threshold . . . represented by a thin line" (Col. 18, lines 12-16). Thus, the indicator bar 204 provides a single limit value.

A user can "expand the value of the second interactive icon 200" (i.e., the indicator bar 204) "into a range of values so that there is a range, or hysteresis, between the point at which some activity may take place and the point at which that activity is canceled" (Col. 18, lines 33-38). For example, 206 in figure 13A of Schaefer indicates that "46" is the value at which "SOUND ALARM WHEN VALUE RISES ABOVE", and 208 in figure 13A indicates that "26" is the value at which "CANCEL ALARM WHEN VALUE FALLS BELOW". So, the values shown at 206 and 208 of Schaefer represent an expanded single limit value, where there is only one limit value past which the alarm will sound (e.g., a value of "46", an not the value of "26", in Fig. 13A). Thus, Schaefer provides "a single crossing threshold" regardless of the expanded value of the second interactive icon. As such, Schaefer and Harrow fail to teach or suggest, besides other things, both a first pair of high and low limit elements representative of engineering hard high and low limit values and a second pair of high and low limit elements representative of operator set high and low limit values for a corresponding process variable, as recited in claims 1 and 21.

Applicants further submit that the Examiner has failed to clearly identify some suggestion or motivation, either in the references themselves or in the knowledge generally available to one

of ordinary skill in the art, to modify the reference or to combine reference teachings. The Examiner asserts that it "would have been obvious to one of ordinary skill in the art . . . to modify the gauge axis and the graphical shape taught by Schaefer et al. to include the user defining high and low limits of Harrow et al., in order to provide a dragging the slider portion of the second interactive icon into the top or bottom of the underlying graphic display of data cause the scale of the underlying data to expand or contract so that any value on the underlying display of graphical data may be set, as taught by Harrow et al." Applicants respectfully submit that they are unable to fully understand what the Examiner asserts is the motivation to combine the recited documents in the statement "in order to provide a dragging the slider portion of the second interactive icon into the top or bottom of the underlying graphic display of data cause the scale of the underlying data to expand or contract so that any value on the underlying display of graphical data may be set, as taught by Harrow et al." As such, Applicants traverse this assertion as not providing adequate motivation and ask the Examiner for clarification so Applicants have a chance to more fully respond thereto.

With respect to claims 3-5, 7-13, 15-17, 19, 23-25, 27-33, and 35-38, Applicants respectfully submit that these claims are also patentable as further limitations of patentable base claims 1 and 21. Furthermore, claims 4-5, 8, 10-11, 15, 19, 24-25, 28, 30-31, 35, and 38, besides others, are each patentable over Schaefer and Harrow based on the subject matter recited in each of the claims.

For claims 4 and 24, Applicants respectfully submit that the Examiner has failed, besides other things, to identify where Harrow or Schaefer teach or suggest all the claim limitations, or to identify a suggestion or a motivation to combine Harrow and Schaefer. Applicants respectfully submit that the Examiner has failed to show where Harrow or Schaefer teach or suggest a single pair of parallel lines on a gauge axis that represent both an engineering hard high and low limit values and an operator set high and low limit values, as recited in claims 4 and 24. In addition,

Applicants respectfully submit that the Examiner has failed to identify a suggestion or a motivation to combine Harrow and Schaefer so as to arrive at the subject matter recited in claims 4 and 24.

For claims 5 and 25, Applicants respectfully traverse the rejections. First, the Examiner asserts "Schaefer et al. shows the second pair of parallel lines extending orthogonal to the gauge axis on (column 11, lines 38-64)". Applicants respectfully submit that this statement contradicts the Examiner's statements made earlier in the Office Action. In that earlier statement, the Examiner indicated "[t]he difference between Schaefer et al. and the claim is a second pair of high and low limit elements representative of operator set high and low limit value elements . . . [but that] Harrow et al. teaches the second pair of high and low limit elements". Applicants respectfully submit that the second pair of parallel lines that extend orthogonal to the gauge axis are representative of the operator set high and low limit values for the corresponding process variable (see pending claim 3).

Now the Examiner is asserting "Schaefer et al. shows the second pair of parallel lines extending orthogonal to the gauge axis". Applicants respectfully submit that the asserted teachings of Schaefer appears to be applied inconsistently, as the Examiner first asserts that Schaefer doesn't teach the operator set high and low limit values, but does teach the second pair of parallel lines extending orthogonal to the gauge axis that are representative of the operator set high and low limit values. Applicants respectfully request clarification as to the Examiner's interpretation of Schaefer.

In addition, the "second pair of parallel lines" that Schaefer is asserted to show are located on a "second spoke" of Schaefer (Col. 11, lines 38-53). Schaefer, however, fails to teach or suggest that a single "spoke" includes both a first pair of parallel lines and a second pair of parallel lines.

The Examiner also asserted that "Harrow et al. shows the representative of operator set high and low limit values are displayed at a shorter length than and between the first pair of

parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values along the gauge axis and the at least one pair of high and low limit elements is a pair of parallel lines extending orthogonal to the gauge axis (figures 13A and 13B)." Applicants generally traverse these assertions.

Applicants respectfully submit that Harrow fails to teach or suggest "engineering hard high and low limit values along the gauge axis". To the contrary, the Examiner asserts that these engineering limit values are shown only in Schaefer. As such, Harrow could not display "the representative of operator set high and low limit values . . . at a shorter length than and between the first pair of parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values" as asserted by the Examiner. Applicants respectfully submit, therefore, that that Examiner has failed to present a proper *prima facie* case of obviousness.

For claims 8 and 28, the Examiner asserts "[i]n combination of Schaefer et al. and Harrow et al., they also demonstrates" the subject matter recited in claims 8 and 28 at "(figure 1, 16, column 8, lines 36-59" and "[i]n combination of Schaefer et al. and Harrow et al. (figure 13A), the graphical shape is positioned outside of the parallel lines when the value for the corresponding process variable is outside the high and low process limit values." Applicants respectfully traverse these assertions.

Claim 8 and 28 state in part that the graphical shape is positioned outside of the parallel lines of the second pair of high and low limit elements when the value for the corresponding process variable is outside the operator set high and low process limit values by a predetermined percentage. Column 8, lines 36-59 of Schaefer recites in part that for figure 1, "spokes 1 through 8 radiating from the common origin 0 each represents the scale for one or more process parameters . . . [where] points 9 through 16, which are all a fixed distance from the common origin 0, represent the target or reference value of the associated parameter or parameters." "The actual value of each parameter is also plotted on the associated spoke . . . [where] [p]ositive

deviations from the target value are shown at the at points further away form the common origin 0 than the reference values and negative deviations are plotted closer to the origin." (Col. 8, lines 44-48). "When an actual value exceeds a limit in either direction, the vertice is **plotted at the limit** but since . . . the numerical value of the parameter appears on the display, the operator will be aware of the condition." (Emphasis added) (Col. 9, lines 35-39). In addition, Schaefer and Harrow both fail to teach or suggest the "predetermined percentage" element as recited in claims 8 and 28. Thus, Schaefer and Harrow fail to teach or suggest displaying the graphical shape at position outside of the pair of parallel lines when the value for the corresponding process variable is outside the second pair of high and low elements representative of operator set high and low process limit values by at least a predetermined percentage, as recited in claims 8 and 28.

For claims 10, 11, 30 and 31, the Examiner states "Schaefer et al. also shows the graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable to be maximized and the graphical symbol is representative of a corresponding process variable to be maximized (column 17, lines 4-17)." Applicants respectfully traverse these assertions. Column 17, lines 4-17 of Schaefer recite a "flow chart for the iconic program which utilizes the data developed in the preceeding [*sic*] programs to generate the displays on the visual display units 57 and 58 . . . [where] [i]f the iconic or top level display has not been selected for display has not been selected for display on any of the visual display units . . . the remainder of the iconic program is not needed and is therefore not run . . . [a]ssuming that at least one observer is calling for the top level display, a determination is made in block 101 whether a reactor trip has occurred while the terminate . . . ." Applicants respectfully submit the cited section of Schaefer, or any portion of Schaefer, fails to teach or suggest either a graphical symbol representative of a corresponding process variable to be maximized or to be minimized, as recited in claims 10, 11, 30 or 31.

The Examiner has also asserted that Schaefer's failure to teach or suggest either a graphical symbol representative of a corresponding process variable to be maximized or to be minimized is not true, as "[t]he variable of values can be maximized or minimized by the operator (user) and the software engineer" (Office Action, page 8). Applicant respectfully traverses these assertions. As Schaefer fails to teach or suggest the elements recited in claims10, 11, 30 or 31, Applicant considers the Examiner's assertions to be based on either personal knowledge, common knowledge in the art or "well-known" prior art. As such, Applicants respectfully request one or more documents and/or an affidavit from the Examiner in support of these assertions as required by M.P.E.P. 2144.03.

For claims 15 and 35, Applicants respectfully traverse the Examiner's assertion that "Schaefer et al. also teaches the graphical shape is a circle positioned along the gauge axis (figure 1, column 9, lines 39-66). Applicants respectfully submit that figure 1 and column 9, lines 39-66 of Schaefer fails to show a graphical shape of a circle positioned along the gauge axis, as recited in claim 15 and 35, but rather shows line segments positioned along the "spokes".

The Examiner has also asserted that Schaefer's failure to teach or suggest the graphical shape of a circle positioned along the gauge axis is not true, as "Schaefer et al. teaches the graphical shape is a circle positioned along the gauge axis (figure 1, column 9, lines 39-66)" where "[e]lements 9, 10, 11, 12, 13, 14, 15 and 16 are on the circle". Applicants respectfully traverse these assertions. Elements 9, 10, 11, 12, 13, 14, 15 and 16 identified by the Examiner form a "polygon" (e.g., an octagon in the case of Figure 1), and not a circle (see Schaefer Col. 8, lines 38-44). Thus, Schaefer fails to teach or suggest a graphical shape of a circle positioned along the gauge axis, as recited in claim 15 and 35.

For claims 19, the Examiner asserts "Harrow et al. discloses a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, wherein each of the manipulated and controlled variables includes a

graphical device displayed in proximity thereto (figure 11B, column 18, lines 16-32)." Applicants respectfully traverse the rejection.

Applicants respectfully submit that Harrow fails to teach the above-recited subject matter of claim 19. Rather, Harrow teaches a "graphic display of data" having Cartesian coordinates defining an independent axis "CRC Errors" and a dependent axis "Time" on which a graphical indication of the CRC errors per hour are plotted (Col. 18, lines 16-32). As such, Harrow, however, does not teach or suggest a matrix display with manipulated variables displayed along a first axis and the controlled variables displayed along a second axis, or a graphical device displayed in proximity to each of the manipulated and controlled variables, as recited in claim 19.

For claim 38, the Examiner asserts that Harrow, at column 6, lines 30-65, demonstrates the method recited in claim 38. Applicants respectfully traverse the rejection. Applicants respectfully repeat the argument presented above for claim 19 in support that Harrow fails to teach or suggest displaying a matrix display having manipulated variables displayed along a first axis of the matrix and the controlled variables displayed along a second axis of the matrix, as recited in claim 38. Furthermore, at column 6, lines 30-65 of Harrow recites, in part, either "FIG. . . . illustrates the exemplary second interactive icon utilized in the user interface of the present invention . . ." or "FIG. . . illustrates the processing flow for user-initiated action" (Col. 6, lines 30-65). The portion of Harrow cited by the Examiner, however, fails to teach or suggest displaying a matrix display having manipulated variables displayed along a first axis of the matrix and the controlled variables displayed along a second axis of the matrix, as recited in claim 38.

Based on at least the forgoing reasons, the Office Action fails to establish a *prima facie* case of obviousness for the rejection of claims 3-5, 7-13, 15-17, 19, 23-25, 27-33, and 35-38. Applicants respectfully request reconsideration and allowance of claims 1, 3-5, 7-13, 15-17, 19, 21, 23-25, 27-33, and 35-38.

Claims 18, 20 and 39

The Office Action rejected claims 18, 20 and 39 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,675,147 to Schaefer *et al.* (hereinafter "Schaefer") in view of U.S. Patent No. 5,375,199 to Harrow *et al.* (hereinafter "Harrow") and further in view of U.S. Patent No. 5,631,825 to van Weele *et al.* (hereinafter "van Weele"). Applicants respectfully traverse the rejection of the claims, as follows.

For claims 18, 20, and 39, Applicants respectfully traverse the rejections and repeat the arguments presented above for claims 1 and 21 in support of the patentablility of claims 18, 20, and 39.

Applicants respectfully request reconsideration and allowance of claims 18, 20 and 39.

Summary

It is respectfully submitted that the pending claims 1, 3-5, 7-21, 23-25 and 27-51 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for

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APPENDIX A - SPECIFICATION/CLAIM AMENDMENTS
INCLUDING NOTATIONS TO INDICATE CHANGES MADE
Serial No.: 09/345,335
Docket No.: 115.00100101

Amendments to the following are indicated by underlining what has been added.

In the Claims

Claims 1, 3-5, 7-21, 23-25 and 27-51 are pending. For convenience, all pending claims are shown below.

1. A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each graphical device corresponds to a process variable, wherein at least one graphical device for a corresponding process variable includes:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values.

3. The graphical user display of claim 1, wherein the at least one graphical device includes a first pair of parallel lines extending orthogonal to the gauge axis representative of the engineering hard high and low limit values for the corresponding process variable and a second pair of pair of parallel lines extending orthogonal to the gauge axis representative of the operator set high and low limit values for the corresponding process variable.

4. The graphical user display of claim 3, wherein a single pair of parallel lines extending orthogonal to the gauge axis represent both the engineering hard high and low limit values and the operator set high and low limit values for the corresponding process variable when the operator set high and low limit values are set at the engineering hard high and low limit values.

5. The graphical user display of claim 3, wherein the second pair of parallel lines extending orthogonal to the gauge axis representative of operator set high and low limit values are displayed at a shorter length than and between the first pair of parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values along the gauge axis.

7. The graphical user display of claim 3, wherein the graphical shape is positioned adjacent one of the first or second pair of high and low limit elements when the value for the corresponding process variable is within a certain range of the engineering hard high and low limit values or the operator set high and low limit values.

8. The graphical user display of claim 3, wherein the graphical shape is positioned outside of the parallel lines of the second pair of high and low limit elements when the value for the corresponding process variable is outside the operator set high and low process limit values by a predetermined percentage.

9. The graphical user display of claim 1, wherein the graphical device further includes a graphical symbol representative of an optimization characteristic for the corresponding process variable.

10. The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

11. The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

12. The graphical user display of claim 9, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

13. The graphical user display of claim 1, wherein the at least one graphical device further includes a graphical symbol representative of the corresponding process variable being constrained to set point.

14. The graphical user display of claim 1, wherein the at least one graphical device further includes a graphical symbol representative of the corresponding process variable being wound up.

15. The graphical user display of claim 1, wherein the graphical shape is a circle positioned along the gauge axis.

16. The graphical user display of claim 1, wherein the graphical shape has a color of a set of colors that reflects the state of the current value for the corresponding process variables.

17. The graphical user display of claim 16, wherein a color for the graphical shape represents one of a current value of the corresponding process variable being within the second pair of high and low limit values, the current value of the corresponding process variable being within a

percentage of one of the second pair of high and low limit values, and the current value of the corresponding process variable being outside of the second pair of high and low limit values.

18. The graphical user display of claim 1, wherein the process is a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controllable variables of the one or more process variables.

19. The graphical user display of claim 18, wherein the graphical user display includes a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, wherein each of the manipulated and controlled variables includes a graphical device displayed in proximity thereto.

20. The graphical user display of claim 1, wherein each graphical device displayed is selectable for navigation to more detailed information for process variable corresponding to the selected graphical device, wherein the detail information is displayed on the same screen therewith.

21. A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the method comprising the step of displaying at least one graphical device for a corresponding process variable, wherein displaying the at least one graphical device includes:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low elements representative of operator set high and low limit values for the corresponding process variable on the gauge axis; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.

23. The method of claim 21 , wherein displaying the first pair of high and low limit elements representative of engineering hard high and low limit values includes displaying a first pair of parallel lines extending orthogonal to the gauge axis, and further wherein displaying the second pair of high and low limit elements representative of operator set high and low limit values includes displaying a second pair of parallel lines extending orthogonal to the gauge axis.

24. The method of claim 21, wherein displaying at least one pair of high and low limit elements includes displaying a single pair of parallel lines extending orthogonal to the gauge axis to represent both the engineering hard high and low limit values and the operator set high and low limit values for the corresponding process variable when the operator set high and low limit values are set at the engineering hard high and low limit values.

25. The method of claim 23, wherein the second pair of parallel lines extending orthogonal to the gauge axis representative of operator set high and low limit values are displayed at a shorter length than and between the first pair of parallel lines extending orthogonal to the gauge axis representative of engineering hard high and low limit values.

27. The method of claim 23, wherein displaying the graphical shape along the gauge axis includes displaying the graphical shape at position adjacent one of the first or second pair of high

and low limit elements when the value for the corresponding process variable is within a certain range of one of the high and low process limit values.

28. The method of claim 23, wherein displaying the graphical shape along the gauge axis includes displaying the graphical shape at position outside of the parallel lines when the value for the corresponding process variable is outside the second pair of high and low elements representative of operator set high and low process limit values by at least a predetermined percentage.

29. The method of claim 21, wherein the method further includes displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

30. The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

31. The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

32. The method of claim 29, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

33. The method of claim 21, wherein displaying the graphical shape along the gauge axis further includes displaying a graphical symbol representative of the corresponding process variable being constrained to set point.

34. The method of claim 21, wherein displaying the graphical shape along the gauge axis further includes displaying a graphical symbol representative of the corresponding process variable being wound up.

35. The method of claim 21, wherein displaying the graphical shape along the gauge axis includes displaying a circle along the gauge axis.

36. The method of claim 21, wherein the method further includes:

determining a state of a current value for the corresponding process variable; and

displaying the graphical shape in a color of a set of colors that reflects the determined state for the corresponding variable.

37. The method of claim 36, wherein determining the state of the current value includes determining whether the current value of the corresponding process variable is within the second pair of high and low limit values, whether the current value of the corresponding process variable is within a certain percentage of one of the second pair of high and low limit values, and whether the current value of the corresponding process variable is outside of the second pair of high and low limit values.

38. The method of claim 21, wherein the process is a continuous multivariable process being performed at a process plant, wherein the continuous multivariable is operable under control of at least manipulated variables and controlled variables of the one or more process variables, and further wherein the method includes:

displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof; and

displaying a graphical device in proximity to each of the manipulated variables and controlled variables.

39. The method of claim 21, wherein the method further includes:

receiving user input to select a displayed graphical device; and

displaying detailed information for the process variable corresponding to the selected graphical device, wherein the detailed information is displayed on the same screen with the graphical device.

40.(New) A graphical user display comprising one or more graphical devices for providing real-time process information to a user for a continuous multivariable process being performed at a process plant and operable under control of at least manipulated variables and controlled variables of a plurality of process variables, wherein the graphical user display includes a display providing the manipulated variables and the controlled variables, and wherein one or more of the process variables comprise high and low process limit values associated therewith, wherein each of a plurality of the one or more graphical devices corresponds to a process variable, wherein each graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to process limit values that provides real-time process

information to a user for the process, and further wherein each of the plurality of graphical devices is displayed in proximity to one of the manipulated and controlled variables.

41.(New) The graphical user display of claim 40, wherein the display providing the manipulated variables and controlled variables comprises a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof.

42.(New) The graphical user display of claim 40, wherein at least one graphical device displayed is selectable for navigation to more detail information for a process variable corresponding to the selected graphical device, wherein the detail information is displayed on the same screen therewith.

43.(New) A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each of a plurality of the graphical devices correspond to a process variable, wherein at least one graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low limit elements representative of operator set high and low limit values for the corresponding process variable, where the first and second pair of high and low limit elements are displayed on the gauge axis;

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values; and

a graphical symbol representative of an optimization characteristic for the corresponding process variable.

44.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

45.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

46.(New) The graphical user display of claim 43, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

47.(New) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, wherein the method comprises displaying a plurality of graphical devices for corresponding process variables, wherein displaying at least one of the graphical devices comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low elements representative of operator set high and low limit values for the corresponding process variable on the gauge axis;

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values; and

displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

48.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be maximized.

49.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable to be minimized.

50.(New) The method of claim 47, wherein the graphical symbol is representative of a corresponding process variable which is to be held at a resting value.

51.(New) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controlled variables, wherein one or more of the manipulated variables and controlled variables has high and low process limit values associated therewith, wherein the method comprises displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, and further wherein the method comprises displaying a graphical device in proximity to each of the manipulated variables and controlled variables, wherein displaying the graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable and a second pair of high and low elements representative of operator set high and low limit values for the corresponding process variable on the gauge axis; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.